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**NWS – Corporate Research Center**

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**Blacksburg, VA 24060**

**Email: [phillip.manuel@noaa.gov](mailto:phillip.manuel@noaa.gov)**

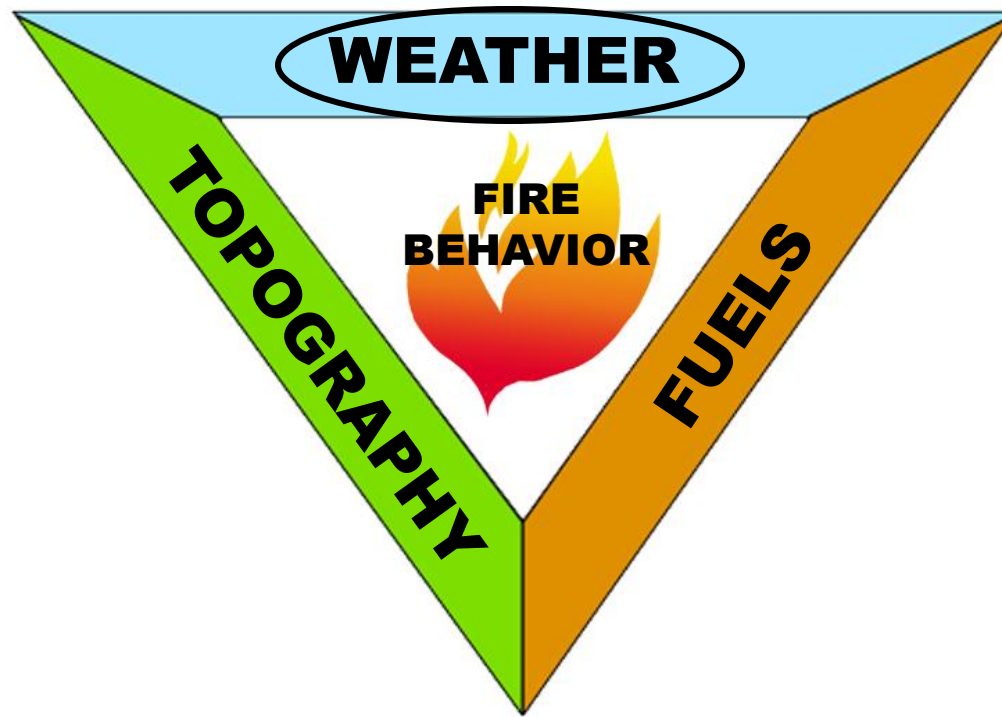
**Phone: 540-552-0084**

**Fax : 540-552-1650**

**Fire Weather Meteorologist**



# How Fire Behaves





# Weather Information





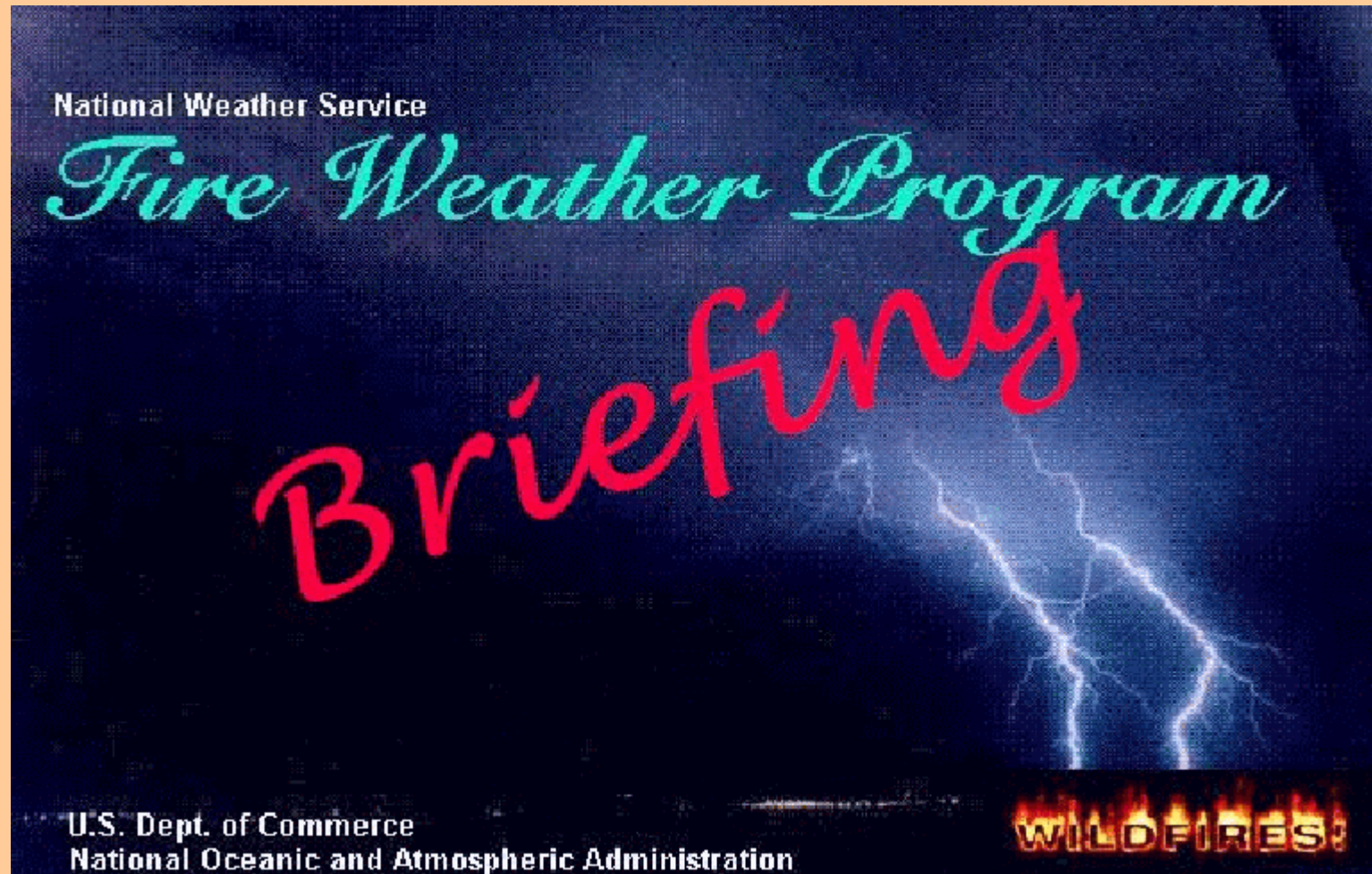
# Where do you get weather information?

?

- Newspaper?
- Almanac?
- Television?

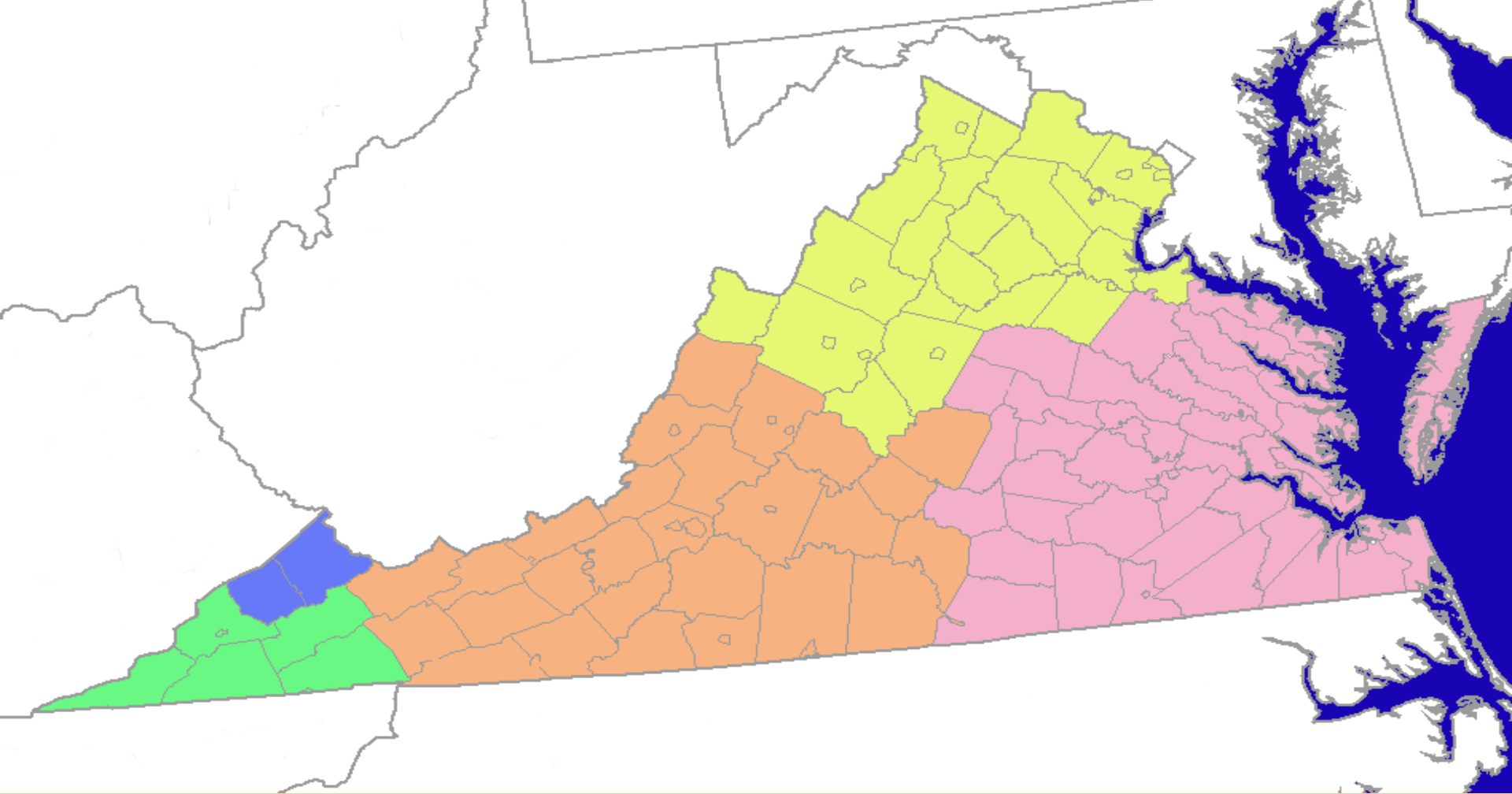






**Your local National Weather Service  
web site.**





**The State of Virginia is served by 5 Weather Service offices:**

**Blacksburg – Wakefield – Sterling – Charleston – Morristown.**



# Where to find information on the Internet

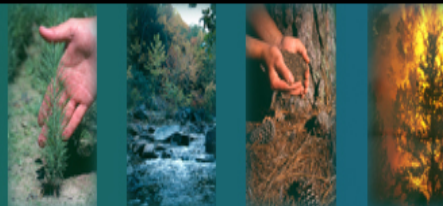
<http://www.weather.gov>

<http://www.dof.virginia.gov>





# VIRGINIA DEPARTMENT OF FORESTRY



Home > Forest Protection and Fire Prevention

Contact Us | Search Forestry

GO

State Forests  
Forest Protection and Fire Prevention  
Conservation  
Forest Health  
Data and Research  
Manage Your Forest • Urban Forestry  
State Nurseries  
Publications and Reports  
Forms  
Business and Bids  
About VDOF

## Forest Protection and Fire Prevention

### Virginia

- Feb. 10, 2008 - [Photos](#) | [Resources used to fight fires.](#)

### Regional and National Information

- [Southern Area Coordination Center](#) (SACC) mobilizes aircraft, crews, and equipment wildland fires and emergency/disaster relief efforts.
- [National Interagency Coordination Center](#)

The Virginia Department of Forestry (VDOF) protects our forest resources from fire. The principle goals of the Forest Protection Program are:

- to prevent injury or loss of human life
- minimize property damage
- protect the forest resources.

Learn more about the [VDOF Forest Protection Program](#).

### Spring Wildfire Season in Virginia

February 15 - April 30

- [Can I burn...? Burning and the 4 p.m. Law](#)

The Virginia Department of Forestry and Smokey Bear **thank you** for abiding by all burning laws and restrictions.

### Fall Wildfire Season in Virginia

October 15 to November 30

### Wildfire Information

[Daily Report](#) - shows wildfire activity as reported to our offices. Fire risk and year-to-date information included. Updated each workday.

### Local Burn Bans and Restrictions

See if [where you live](#) has restrictions in place.

### Weather and Fire Behavior

[Fire weather basics](#) and links to weather websites.

### Fire Danger Rating

We explain the [fire danger rating system](#) in easy-to-understand terms.

### KBDI Drought Index

This [measurement helps us](#) determine fire danger.



# Weather

## Fire Behavior and Weather

### **Virginia Resources (from the National Weather Service Forecast Offices)**

- [Wakefield](#) (southeast VA)
- [Blacksburg](#) (southwest VA)
- [Charleston, WV](#)
- [Raleigh](#)
- [Sterling \(northern VA\) Fire Weather](#)
- [Morristown, TN](#) (Southwestern tip of Virginia)
- [Virginia Weather, State Climatology Office](#)

### **Virginia: Current Conditions, Forecast**

- [VA Hourly](#) - National Weather Service Weather Statistics, updated hourly
- National Weather Service - [Hydrometeorological Prediction Center](#)
- [Accu Weather](#) - comprehensive weather website.
- [Intellicast](#) - Weather data for the United States.
- [Radar](#) - Local weather radar provided by Intellicast.





National Oceanic and Atmospheric Administration

# National Weather Service

WORKING TOGETHER TO SAVE LIVES

Site Map

News

Organization

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Go

## Local forecast by "City, St"

 Go

## Warnings

Current  
By State...

## Observations

Radar  
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Snow Cover  
Space  
Surface Weather...

## Forecasts

Local  
Graphical  
Aviation  
Marine  
Hurricanes  
Severe Weather  
Fire Weather  
Climate...

## Forecast Models

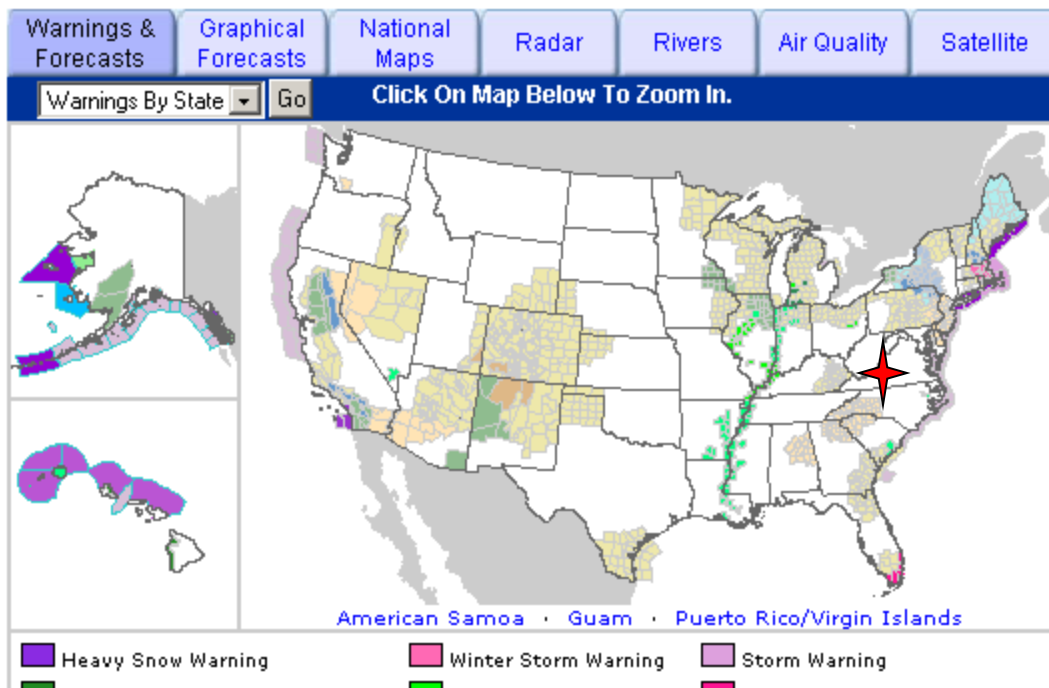
Numerical Models  
Statistical Models...

## Weather Safety

Weather Radio

## Record Snowfall Across Parts of New England

Sounds of snowplows, shovels and scrapers echo through neighborhoods in New England in the wake of last weekend's historic blizzard. Snowfall measured between one and three feet in most areas. Powerful winds built drifts of up to seven feet high in some places.

[Details...](#)





# National Weather Service Forecast Office

## Blacksburg, VA

[Home](#)[News](#)[Página en Español](#)

Local forecast by  
"City, St"

City, St

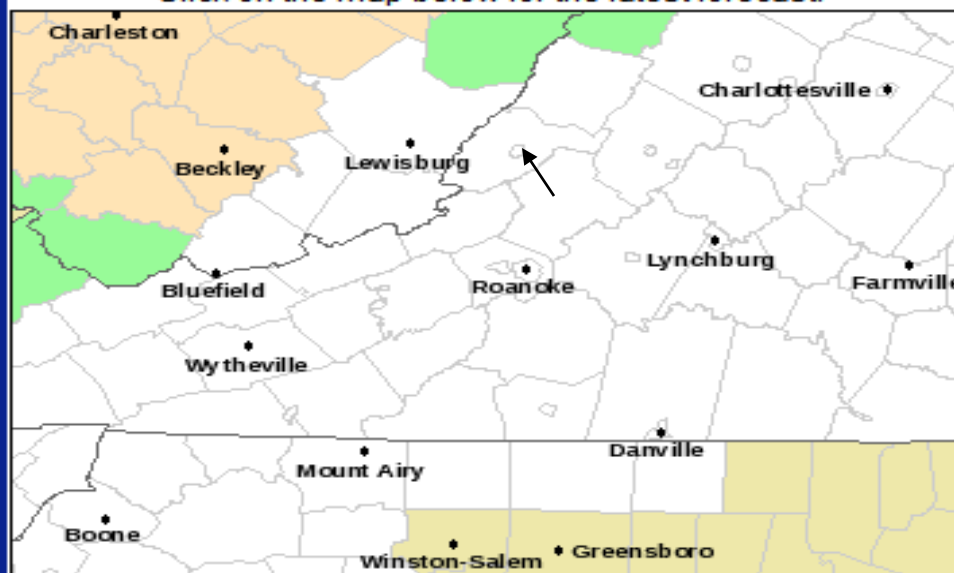
### Top News of the Day:

- [2009 Spotter Training Classes Offered...details \(01/11/09\)](#)
- [Top 5 Weather Events of 2008 in our Forecast Area...details \(01/10/09\)](#)
- [More Headlines](#)

### Quick Glimpse at the Weather and Local Hazards

### Blacksburg, VA

Click on the map below for the latest forecast.



[Read watches,  
warnings &  
advisories](#)



[Hazardous Weather  
Outlook](#)



[Short Term Forecast](#)



[Special Weather  
Statement](#)



Last map update: Sun, Jan. 11, 2009 at 6:00:56 pm EST

### [About the New Point and Click Map Changes](#)

[Frequently Asked Questions About The Map and Colors](#)

Choose from the options below for other ways to view your NWS forecast

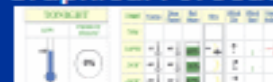
[Text Forecasts](#)



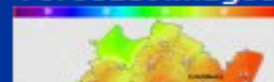
[Digital Forecast](#)



[Graphical Forecast](#)



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# Point and Click



Your **National Weather Service** forecast

Covington VA



Enter Your "City, ST" or zip code

Go

NWS Blacksburg, VA

[En Español](#)

**Point Forecast:** Covington VA

**Last Update:** 2:50 pm EST Jan 11, 2009

37.79°N 79.99°W

**Forecast Valid:** 7pm EST Jan 11, 2009-6pm EST Jan 18, 2009

## Forecast at a Glance

**Tonight**

**Monday**

**Monday  
Night**

**Tuesday**

**Tuesday  
Night**

**Wednesday**

**Wednesday  
Night**

**Thursday**

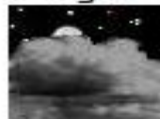
**Thursday  
Night**



Partly  
Cloudy  
Lo 26°F



Sunny  
Hi 45°F



Mostly  
Cloudy  
Lo 25°F



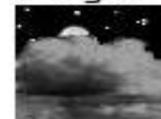
50%  
Chance  
Rain/Snow  
Hi 43°F



30%  
Chance  
Snow  
Lo 17°F



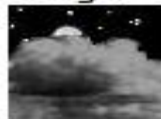
Partly  
Sunny  
Hi 31°F



Mostly  
Cloudy  
Lo 17°F



30%  
Chance  
Snow  
Hi 29°F



Mostly  
Cloudy  
Lo 8°F

## Detailed 7-day Forecast

**Tonight:** Partly cloudy, with a low around 26. Northwest wind between 8 and 11 mph.

**Monday:** Sunny, with a high near 45. West wind between 5 and 9 mph.

**Monday Night:** Mostly cloudy, with a low around 25. Calm wind.

**Tuesday:** A slight chance of snow showers before noon, then a slight chance of rain and snow showers between noon and 1pm, then a chance of rain showers after 1pm. Mostly cloudy, with a high near 43. Calm wind becoming west between 13 and 16 mph. Winds could gust as high as 26 mph. Chance of precipitation is 50%. New precipitation amounts of less than a tenth of an inch possible.

**Tuesday Night:** A chance of snow showers, mainly before 10pm. Partly cloudy, with a low around 17. West wind between 11 and 17 mph, with gusts as high as 29 mph.

## Detailed Point Forecast

[\[Move Down\]](#)

[Click Map for Forecast](#)

[Disclaimer](#)



POWERED BY

Map data ©2009 Tele Atlas - [Terms of Use](#)

Requested Location Forecast Area

Lat/Lon: 37.79°N 79.99°W Elevation: 1296 ft



**Radar/Satellite  
Imagery**  
 RIDGE Radar  
 Standard Radar  
 Nationwide Radar  
 Satellite Images

**Forecasts**  
 Activity Planner  
 Aviation  
 Fire Weather  
 Forecast Discussion  
 Graphical  
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 Maps & Models

**Climate**  
 Local  
 National  
 More

**Weather Safety**  
 Storm Ready  
 SKYWARN™  
 NOAA Weather Radio  
 Amateur Radio  
 Safety Links

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 Newsletter  
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 Educational  
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 Tour Request  
 Other NWS Offices

**Contact Us**  
 RNK Webmaster



Last map update: Sun, Jan. 11, 2009 at 6:00:56 pm EST

Special Weather  
Statement

### About the New Point and Click Map Changes Frequently Asked Questions About The Map and Colors

Choose from the options below for other ways to view your NWS forecast

**Text Forecasts**



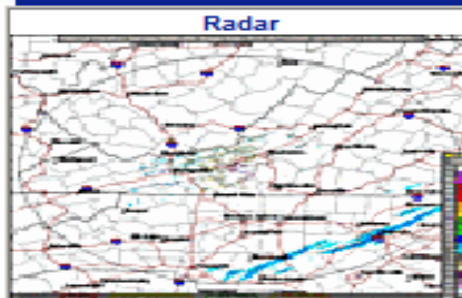
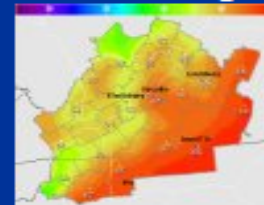
**Digital Forecast**



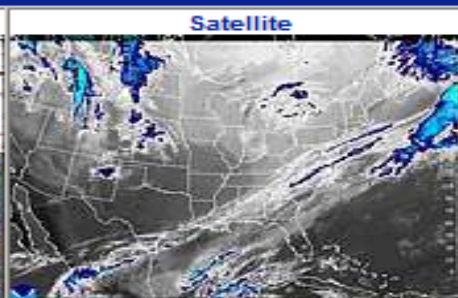
**Graphical Forecast**



**Graphical  
Forecast Images**



**Latest NEXRAD image**  
[Enlarge image](#)

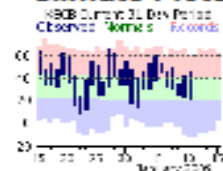


**Latest Infrared image from GOES 12**  
[Enlarge image](#)

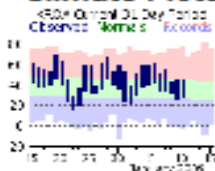


**Today's significant weather**  
[Enlarge map](#)

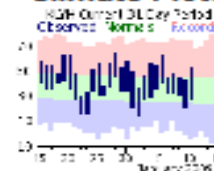
**Blacksburg  
Climate Plots**



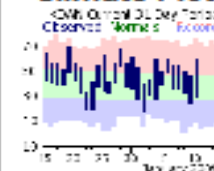
**Roanoke  
Climate Plots**



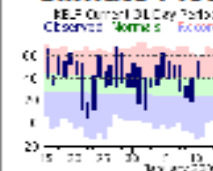
**Lynchburg  
Climate Plots**



**Danville  
Climate Plots**



**Bluefield  
Climate Plots**





Local forecast by  
"City, St"

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[Maps & Models](#)

# Fire Weather

*Click the county for your fire weather forecast*



NOTE: IF FORECAST ABOVE IS UNAVAILABLE, PLEASE REFERENCE THE  
[BACKUP SERVER](#) FOR YOUR FIRE WEATHER FORECAST! THANK YOU.

**Text version**





Botetourt County

# Requested Product



*Printer Friendly Version*

FNUS51 KRNK 112005  
FWFRNK

FIRE WEATHER PLANNING FORECAST FOR SW VA...SE WV AND NW NC  
NATIONAL WEATHER SERVICE BLACKSBURG VA  
305 PM EST SUN JAN 11 2009

## Discussion

.DISCUSSION...

HIGH PRESSURE WILL BUILD SLOWLY EAST INTO THE AREA TONIGHT RESULTING IN DRIER BUT COLDER WEATHER THROUGH MONDAY. SCATTERED SNOW SHOWERS MAY OCCUR ACROSS THE FAR WESTERN MOUNTAINS BUT AMOUNTS ARE EXPECTED TO BE LIGHT. ANOTHER COLD FRONT WILL TRAVEL THROUGH THE REGION TUESDAY BRINGING MORE MOUNTAIN SNOW SHOWERS INTO TUESDAY NIGHT. A STRONGER COLD FRONT WILL AGAIN INCREASE SNOW SHOWER COVERAGE ON THURSDAY FOLLOWED BY MUCH COLDER AIR FOR LATE IN THE WEEK. THIS ARCTIC AIR WILL KEEP FRIGID TEMPERATURES ACROSS THE AREA NEXT WEEKEND.

&&

VAZ023-120930-  
BOTETOURT-  
INCLUDING THE CITIES OF...FINCASTLE  
305 PM EST SUN JAN 11 2009

	TONIGHT	MON	MON NIGHT	TUE
CLOUD COVER	PCLDY	MCLEAR	PCLDY	MCLDY
PRECIP TYPE	NONE	NONE	NONE	SHOWERS
CHANCE PRECIP (%)	0	0	0	20



VAZ023-120930-  
BOTETOURT-  
INCLUDING THE CITIES OF...FINCASTLE  
305 PM EST SUN JAN 11 2009

Short Term Forecast

	TONIGHT	MON	MON NIGHT	TUE
CLOUD COVER	PCLDY	MCLEAR	PCLDY	MCLDY
PRECIP TYPE	NONE	NONE	NONE	SHOWERS
CHANCE PRECIP (%)	0	0	0	20
MIN/MAX TEMP	23	45	25	45
MAX/MIN RH %	79	37	80	40
WND20FT2MIN/EARLY (MPH)	NW 8	NW 6	LGT/VAR	SW 6G22
WND20FT2MIN/LATE (MPH)	NW 8G18	LGT/VAR	LGT/VAR	W 13G29
PRECIP AMOUNT	0.00	0.00	0.00	0.01
PRECIP DURATION				1
PRECIP BEGIN				1 PM
PRECIP END				CONTINUING
MIXING HGT (FT-AGL)		5280		5090
TRANSPORT WND (MPH)		W 9		W 32
VENT RATE (MPH-FT)		47520		162880
DISPERSION (EVENING)	FAIR		VERY POOR	
LAL	1	1	1	1
HAINES INDEX	3	2	3	4

REMARKS...NONE.



LAL	1	1	1	1
HAINES INDEX	3	2	3	4

REMARKS...NONE.

.FORECAST FOR DAYS 3 THROUGH 7...

.TUESDAY NIGHT AND WEDNESDAY...PARTLY CLOUDY. A CHANCE OF SNOW SHOWERS. LOWS AROUND 18. HIGHS IN THE LOWER 30S. MINIMUM RH 33 PERCENT. SOUTHWEST WINDS 15 TO 20 MPH.

.WEDNESDAY NIGHT AND THURSDAY...MOSTLY CLOUDY. LOWS IN THE LOWER 20S. HIGHS IN THE LOWER 30S. MINIMUM RH 46 PERCENT. NORTHWEST WINDS 10 TO 15 MPH.

.THURSDAY NIGHT AND FRIDAY...PARTLY CLOUDY. LOWS AROUND 11. HIGHS IN THE LOWER 20S. MINIMUM RH 38 PERCENT. NORTHWEST WINDS 15 TO 20 MPH.

.FRIDAY NIGHT AND SATURDAY...MOSTLY CLEAR. LOWS AROUND 9. HIGHS IN THE LOWER 20S. MINIMUM RH 35 PERCENT. WEST WINDS 10 TO 15 MPH.

.SATURDAY NIGHT AND SUNDAY...PARTLY CLOUDY. NOT AS COLD. LOWS IN THE LOWER 20S. HIGHS IN THE MID 30S. MINIMUM RH 49 PERCENT. SOUTHWEST WINDS 10 TO 15 MPH.

.OUTLOOK 8 TO 14 DAYS...

TEMPERATURES BELOW NORMAL. PRECIPITATION NEAR NORMAL.

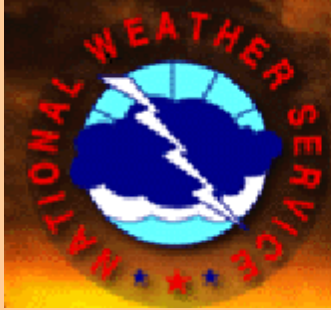
**Long Term Forecast**  
**“the extended forecast”**

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**Site specific forecasts for wildfires and prescribed burns may be obtained by contacting the National Weather Service in Blacksburg, VA at (540) 552-0084 or by submitting a **Spot Request** over the Internet.**

**Note:** Please review the **Request Procedures** before submitting a request.  
Certain limitations apply.





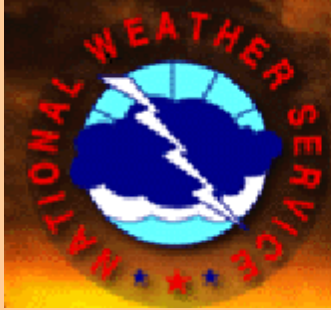
# ***FORECASTS***

## **Planning Forecast**

**Issued twice daily. During the morning and afternoon (2:00-4:00 am/pm).**

**Composed of: a Weather Discussion, Current Watches and/or Warnings, Forecast Weather Conditions and a Transport and Stability Forecast, An Extended Forecast (including winds and relative humidity minimums), and an 8-14 day outlook.**



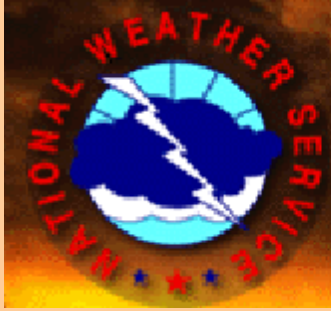


# FORECASTS

## FORECAST HINTS TO KEY ON:

1. Any mention of a strong west or northwest winds (High Wind Warnings and Wind Advisories).
2. Poor overnight humidity recovery or minimums of less than 30%.
3. Dry lightning.
4. An extended period of above normal temperature with below normal precipitation.





# FORECASTS

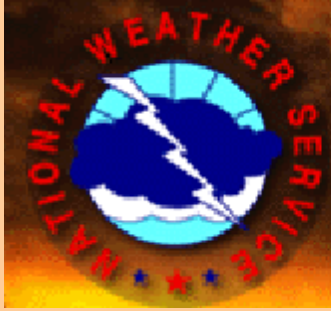
## *Presuppression: (cont.)*

Forecasts are *not site specific.*

General forecast with average conditions over the entire forecast area. Does not take into account for local effects.

The forecast will be updated if weather conditions are no longer representative.





# Site Specific Forecasts

**There are several ways to obtain point forecasts...**

- 1. SPOT Forecast (used primarily for wildfire, hazmat)**
- 2. Weather Activity Planner**

**These forecasts are Latitude Longitude based.**



Climate

Local  
National  
More

Weather Safety

Storm Ready  
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Safety Links

Miscellaneous

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Other NWS Offices

Contact Us

RNK Webmaster



## LATEST FIRE WEATHER WATCHES AND RED FLAG WARNINGS!

### Spot Forecasts:

- [SPOT REQUEST](#)
- [Request Procedures](#)

**“Spot Request”**

### Wildfire Forecasts:

- [FARSITE Data](#)

### Experimental Fire Applications

- [Fire Management Rx Burn Page](#)
- [Weather Planner](#)

### Jefferson National Forest Presuppression Forecasts:

- [Central](#)
- [South](#)
- [East](#)

### RAWS Point Forecasts:

- [441801 Lime Kiln](#)
- [441903 Peddler](#)
- [444002 Craig Valley](#)
- [447502 Stony Fork](#)
- [310101 Laurel Springs](#)
- [310801 Caswell Gamelands](#)
- [312001 Rendezvous Mountain](#)
- [465401 Pipestem](#)



# BLACKSBURG VIRGINIA SPOT FORECASTS

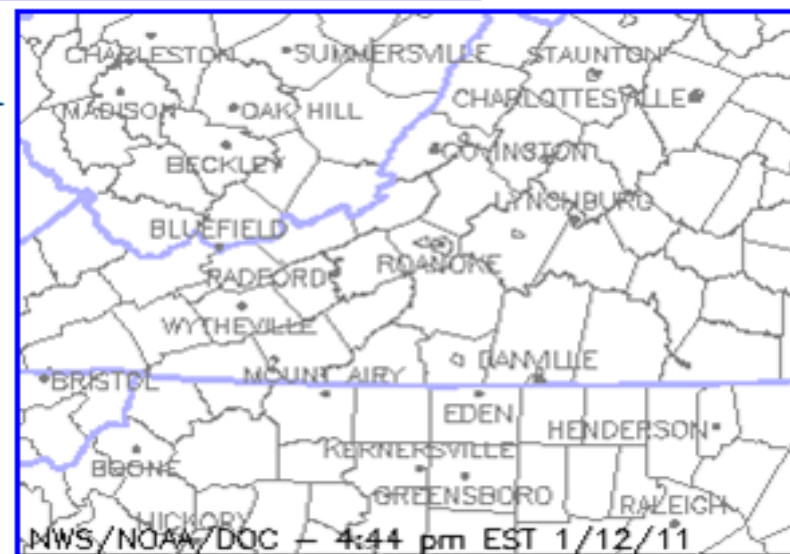
for

**Wednesday**

[←](#) **Jan 12 2011** [→](#)

[CALENDAR](#)

[Submit a new Spot Request](#)



Pending Question Complete

Name	Ignition Time	Status
No Entries		

[Track forecasts sent from AWIPS](#)



National Oceanic and Atmospheric Administration (NOAA)

National Weather Service

Fire & Public Weather Services Branch

Page Author: NWS Internet Services Team

Page last updated at 8:57 am EST 3/5/07



# BLACKSBURG VIRGINIA SPOT FORECAST REQUEST

### Required Elements in RED (\*)

## PROJECT NAME

(\*)Project Name:

☐ Wildfire      ☐ HAZMAT

☒ Prescribed Fire      ☐ SAR

Ignition Time: 1715 Eastern Local Time

Date: 1/12/11

**REQUESTING AGENCY**

(\*)Requesting Agency:

(\*)Requesting Official:

(\*)Phone Number:  Ext. FAX Number: 

Contact Person:

## REASON FOR SPOT FORECAST REQUEST

(\*)Must choose either Wildfire or one of the Non-Wildfire reasons

**Wildfire**

### Non-Wildfire

Under the Interagency Agreement for Meteorological Services (USFS, BLM, NPS, USFWS, BIA).

☐ State, tribal or local fire agency working in coordination with a federal participant in the Interagency Agreement for Meteorological Services.

☐ Essential to public safety, e.g. due to the proximity of population centers or critical infrastructure.

**For NWS Spot forecast policy, see section 4.0 in NWS Instruction 10-401 at**

<http://www.nws.noaa.gov/directives/010/010.htm>

## LOCATION

(\*)Lat:

(\*)Elevation: 

Top
-----

Bottom
--------

(\*)Lon:

Drainage:

(\*)Aspect:

7.5' Quad: Size:  (Acres)

\*Enter Lat/Lon (WGS84/NAD83 preferred)

## FUEL

Type: 

## Sheltering

Full

Partial

○ Unsheltered

## OBSERVATIONS

Place

Elev

Time

Wind

Temp

Wetbulb

RH

Dewpt.

Sky/Weather




(\*)Lat:

(\*)Elevation:  Top  Bottom

Type:

(\*)Lon:

Drainage:

☐ Sheltering

☐ Full

☐ Partial

☐ Unsheltered

7.5' Quad:

(\*)Aspect:

Size:  (Acres)

## OBSERVATIONS

Place	Elev	Time	Wind	Temp	Wetbulb	RH	Dewpt.	Sky/Weather
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

## PRIMARY FORECAST ELEMENTS

TDA TNT TMR (Today, Tonight, Tomorrow)

- |                          |                          |                          |                        |
|--------------------------|--------------------------|--------------------------|------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sky / Weather          |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Temperature            |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Relative Humidity      |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 20 Foot Wind           |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Chance of Wetting Rain |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Smoke Dispersion       |

## REMARKS

Submit Request

Cancel Request

Clear Form



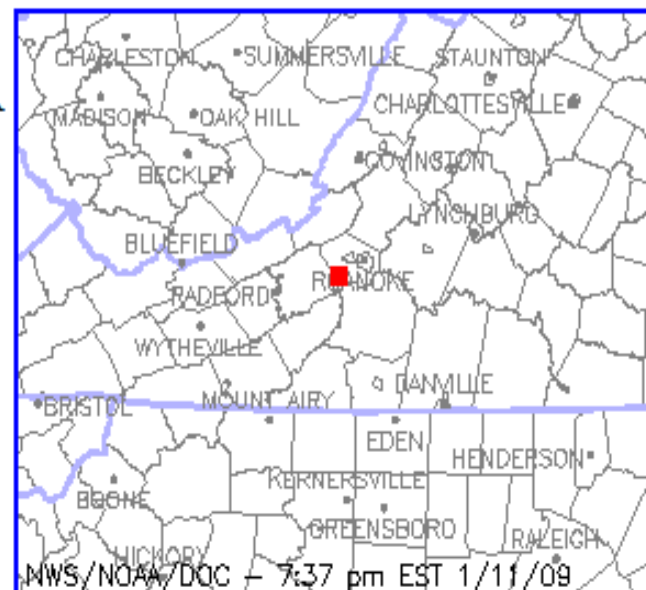
# BLACKSBURG VIRGINIA SPOT FORECASTS

for

**Friday**  
**Jan 2 2009**

[CALENDAR](#)

[Submit a new Spot Request](#)



Pending Question Complete

Name	Ignition Time	Status
<a href="#">Poor Mountain Fire</a>	<a href="#">WILDFIRE</a>	<a href="#">COMPLETE at 7:51 am EST</a>

[Track forecasts sent from AWIPS](#)



National Oceanic and Atmospheric Administration (NOAA)

National Weather Service

Fire & Public Weather Services Branch

Page Author: NWS Internet Services Team

Page last updated at 8:57 am EST 3/5/07



Climate

Local

National

More

Weather Safety

Storm Ready

SKYWARN™

Weather Radio

Amateur Radio

Safety Links

Miscellaneous

Our Office

Products We Issue

Newsletter

Local Research

Educational

Resources

Tour Request

Other NWS Offices

Contact Us

RNK Webmaster



**LATEST FIRE WEATHER WATCHES AND RED FLAG WARNINGS!**

## Spot Forecasts:

- [SPOT REQUEST](#)
- [Request Procedures](#)

## Wildfire Forecasts:

- [FARSITE Data](#)

## Experimental Fire Applications

- [Fire Management Rx Burn Page](#)
- [Weather Planner](#)

**“Weather Planner”**

### Jefferson National Forest Presuppression Forecasts:


- [Central](#)
- [South](#)
- [East](#)

### RAWS Point Forecasts:


- [441801 Lime Kiln](#)
- [441903 Peddler](#)
- [444002 Craig Valley](#)
- [447502 Stony Fork](#)
- [310101 Laurel Springs](#)
- [310801 Caswell Gamelands](#)
- [312001 Rendezvous Mountain](#)
- [465401 Pipestem](#)



# Weather Activity Planner



**National Weather Service Forecast Office**  
**Blacksburg, VA**



HomeNewsOrganizationSearch for:  ☐ NWS ☐ All NOAA

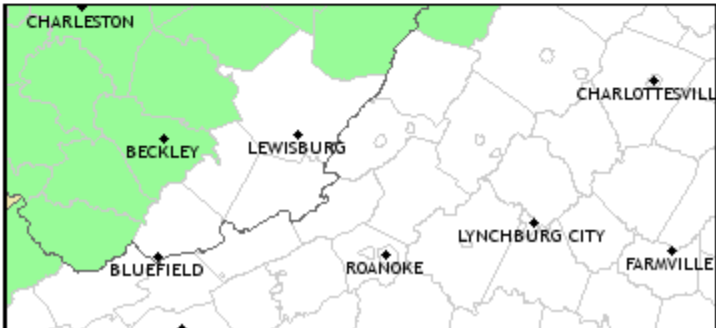
**Weather Safety Planner**

Welcome to the experimental **Weather Activity Planner**. Please enter the range of weather parameters required for your activity. Then, either click the approximate location on the map below, or enter the specific latitude and longitude and hit submit. This will query the forecast grids to find when your weather requirements will be met at the nearest grid point over the next 7 days. Public **comments and suggestions** are encouraged.

This application generates products from a digital forecast data base. It is intended to allow a user to define and produce a forecast for general planning purposes only. As any weather or hydrologic event evolves, updated forecasts and warnings are issued by the NWS. Customers are urged to obtain the latest official forecast information prior to engaging in any weather sensitive activity, and to monitor forecasts for updates during such activities.

The **Weather Activity Planner** is experimental and is NOT meant to replace a spot forecast request. The **Weather Activity Planner** utilizes 20 foot winds only.

Element	Min	Max	Element	Min	Max
<input type="text" value="Temperature"/>	<input type="text"/>	to <input type="text"/>	<input type="text" value="Surface Wind Direction"/>	<input type="text"/>	to <input type="text"/>
<input type="text" value="Relative Humidity"/>	<input type="text"/>	to <input type="text"/>	<input type="text" value="Sky Cover"/>	<input type="text"/>	to <input type="text"/>
<input type="text" value="Surface Wind Speed (mph)"/>	<input type="text"/>	to <input type="text"/>	<input type="text" value="Precipitation Potential"/>	<input type="text"/>	to <input type="text"/>



Read watches, warnings & advisories

Zoom Out

Hazardous Weather Outlook

Short Term Forecast

**Latitude/Longitude Entry**  
decimal degrees (i.e. 42.134) or deg min sec (i.e. 42 23 34)

Latitude:

Longitude:

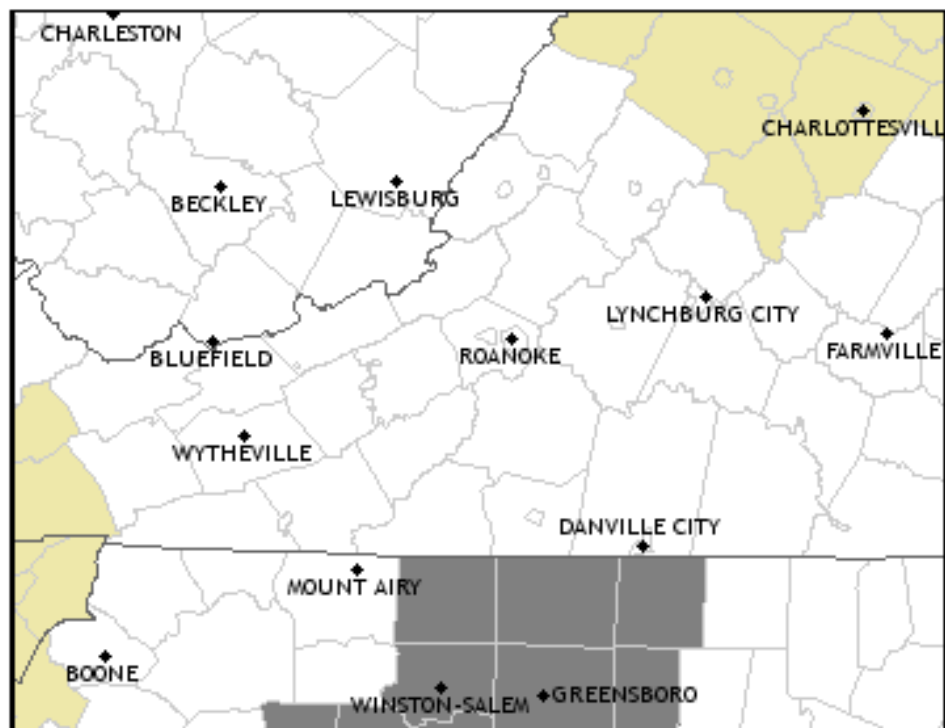


# Weather Activity Planner

The **Weather Activity Planner** is experimental and is NOT meant to replace a spot forecast request. The **Weather Activity Planner** utilizes 20 foot winds only.

Element	Min		Max
<input type="text" value="Temperature"/>	<input type="text" value="32"/>	to	<input type="text" value="70"/>
<input type="text" value="Relative Humidity"/>	<input type="text" value="30"/>	to	<input type="text" value="60"/>
<input type="text" value="Surface Wind Speed (mph)"/>	<input type="text" value="0"/>	to	<input type="text" value="15"/>

Element	Min		Max
<input type="text" value="Surface Wind Direction"/>	<input type="text" value="180"/>	to	<input type="text" value="340"/>
<input type="text" value="Sky Cover"/>	<input type="text" value="0"/>	to	<input type="text" value="60"/>
<input type="text" value="Precipitation Potential"/>	<input type="text" value="0"/>	to	<input type="text" value="30"/>



Last Updated: Tue, Jun. 02 2009 9:35 AM

[Read watches,  
warnings &  
advisories](#)

[Zoom  
Out](#)

[Winter Storm Warning](#)



[Winter Weather  
Advisory](#)



[Wind Chill Advisory](#)



[Wind Advisory](#)



[Special Weather  
Statement](#)



[Hazardous Weather  
Outlook](#)



[Short Term Forecast](#)



**Latitude/Longitude Entry**  
decimal degrees (i.e. 42.134) or  
deg min sec (i.e. 42 23 34)

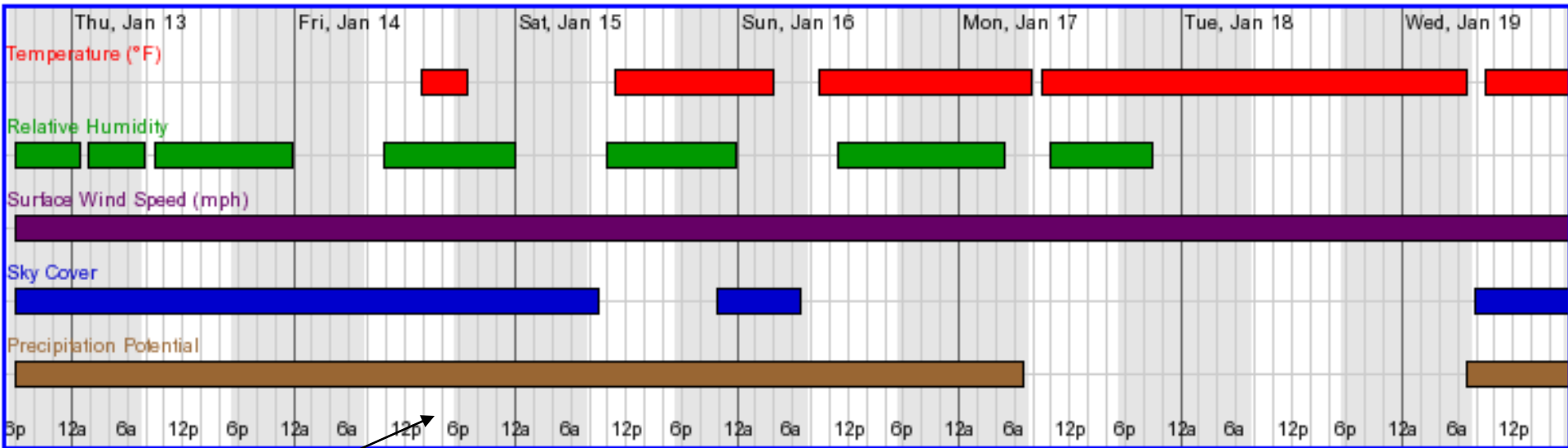
Latitude:

Longitude:



# Weather Activity Planner

The **Weather Activity Planner** is NOT meant to replace a spot forecast request. **Weather Activity Planner** surface winds are a gridded representation of projected, local surface winds at a 5km or 2.5km resolution. The surface winds returned do NOT account for fuel type, sheltering or slope aspect. Users can select either surface wind speeds or 20 foot winds (if the 20 foot wind grid is available). If precise wind forecasts are needed, please submit a spot forecast request to your servicing Weather Forecast Office.



**Friday, January 14 at 5pm**  
Temperature: 33 °F   Surface Wind: WSW 6mph  
Relative Humidity: 44%   Precipitation Potential: 0%   Sky Cover: 33%

48-hr Element Meteorogram

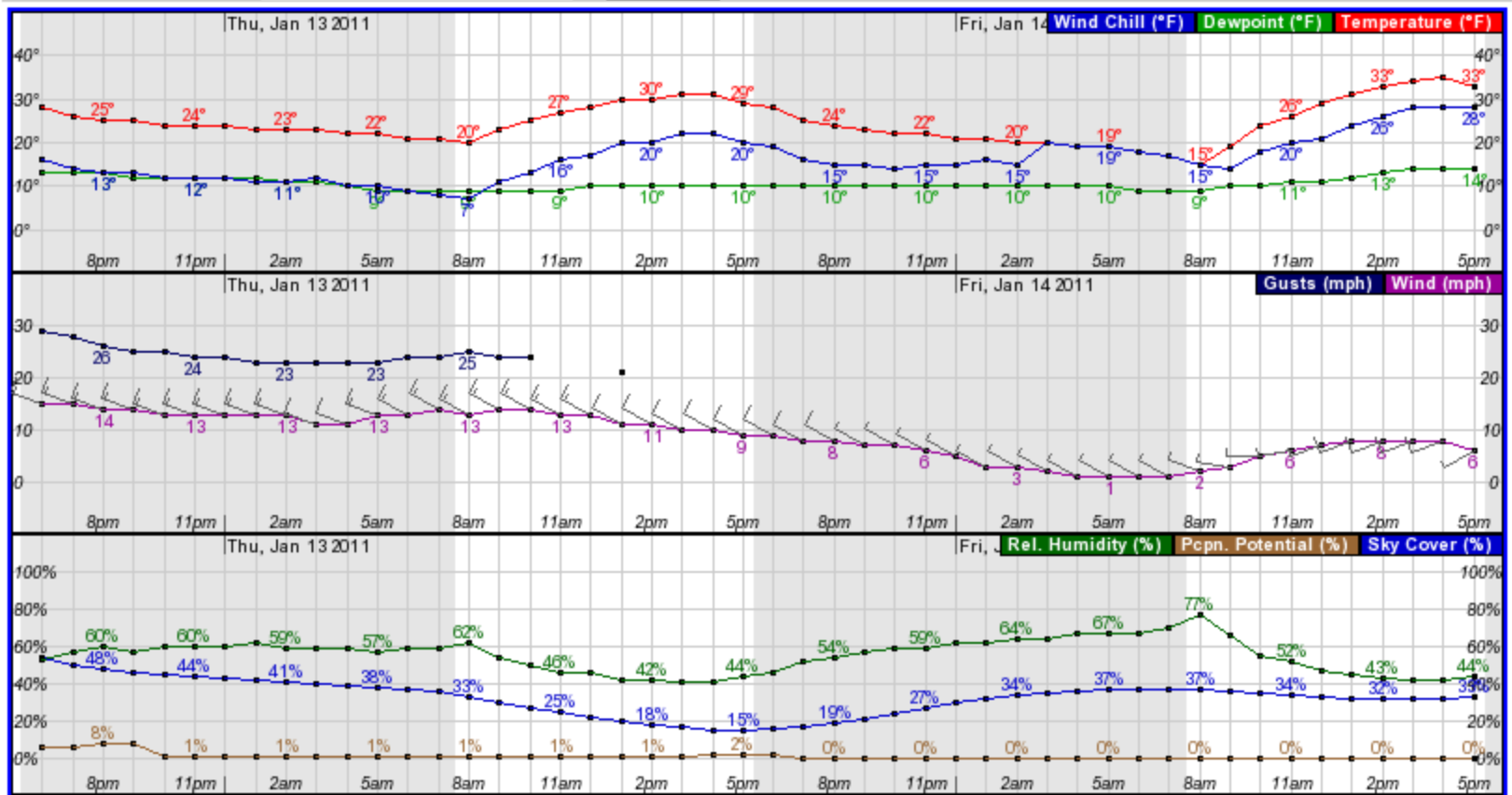
**Planner is interactive. Active weather readout occurs when you mouse over the planner.**



# Weather Activity Planner Meteogram

Weather Elements	Weather/Precipitation	Fire Weather
<input checked="" type="checkbox"/> Temperature (°F)	<input checked="" type="checkbox"/> Thunder	<input type="checkbox"/> Mixing Height (x100ft)
<input checked="" type="checkbox"/> Dewpoint (°F)	<input checked="" type="checkbox"/> Rain	<input type="checkbox"/> Haines Index
<input checked="" type="checkbox"/> Wind Chill (°F)	<input checked="" type="checkbox"/> Snow	<input type="checkbox"/> Lightning Activity Level
<input checked="" type="checkbox"/> Surface Wind <input type="text" value="mph"/>	<input checked="" type="checkbox"/> Freezing Rain	<input type="checkbox"/> Trans. Wind <input type="text" value="mph"/>
<input checked="" type="checkbox"/> Sky Coverage	<input checked="" type="checkbox"/> Sleet	<input type="checkbox"/> 20ft Wind <input type="text" value="mph"/>
<input checked="" type="checkbox"/> Precipitation Potential		
<input checked="" type="checkbox"/> Relative Humidity		

48-Hour Period Starting:

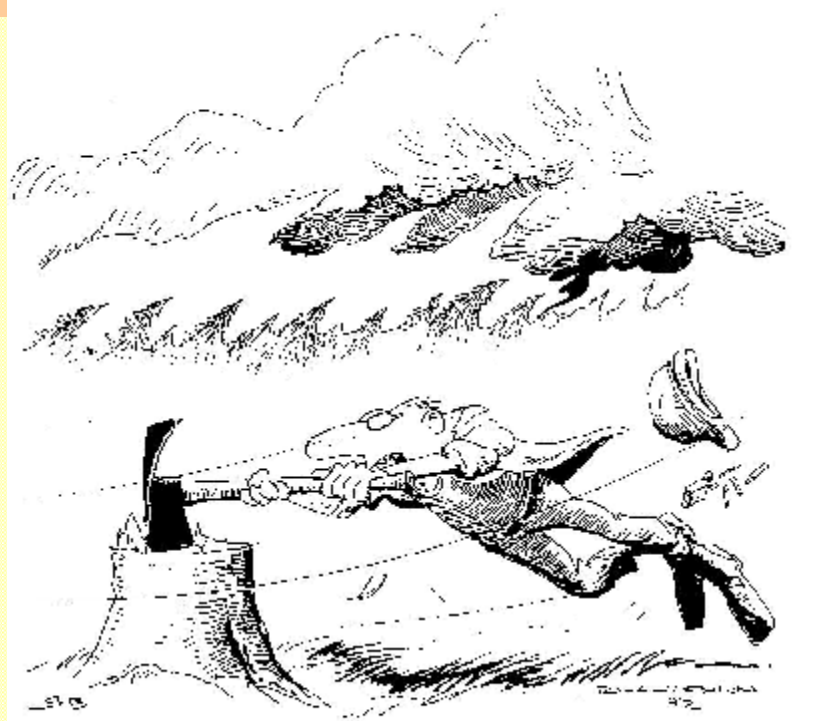






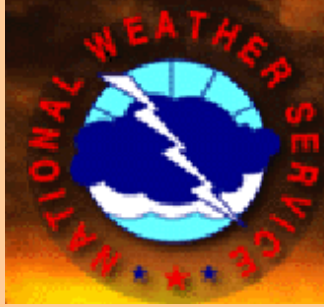
# Weather Terminology

Weather is a great bluffer. Just when you think you have figured it out, it changes.



15. WIND INCREASES AND/OR CHANGES DIRECTION





# Weather Terminology

## *Red Flag Events*

- Unusually low relative humidity.
- Very dry and unstable air. (Haines Index)
- Very strong and shifting winds that may or may not be associated with a cold front.
- The first lightning event after an extended dry period.

**These are weather conditions, when coupled with critically dry and volatile fuel conditions, that contribute to potentially dangerous wildfire situations.**



# **Red Flag Criteria For VA**

**Generally, a Red Flag Warning will be issued when:**

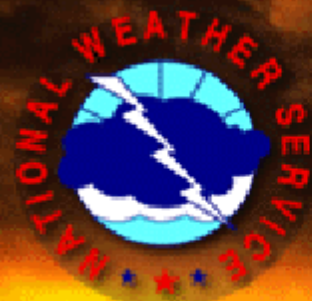
**Ten hour fuel moistures are observed or expected to be 7 percent or less.**

**-AND-**

**Relative humidity is expected to fall below 30 percent at any time over the forecast area and sustained wind of 20 mph or more.**

**Established by VICC/NWS/Fire Management Partners for the 2010 Fire Season**





# Weather Terminology

## **PROBABILITY OF PRECIPITATION**

<i>Slight chance</i>	<i>.....</i>	<i>10 or 20% chance</i>
<i>Chance</i>	<i>.....</i>	<i>30 or 40% chance</i>
<i>Good chance</i>	<i>.....</i>	<i>50% chance</i>
<i>Likely</i>	<i>.....</i>	<i>60 or 70% chance</i>
<i>No qualifying remark</i>	<i>.....</i>	<i>80% or greater</i>

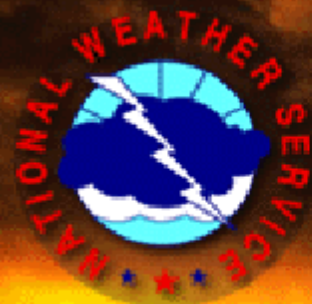
## **AREAL QUALIFIERS**

<i>Isolated or few</i>	<i>.....</i>	<i>less than 15%</i>
<i>Widely or scattered</i>	<i>.....</i>	<i>15 to 25% coverage</i>
<i>Scattered</i>	<i>.....</i>	<i>25 to 54 % coverage</i>
<i>Numerous/widespread</i>	<i>.....</i>	<i>55 to 74% coverage</i>
<i>No qualifying remark</i>	<i>.....</i>	<i>75% or greater</i>

## **PRECIPITATION INTENSITY**

<i>Very light</i>	<i>.....</i>	<i>less than .01" per hour</i>
<i>Light</i>	<i>.....</i>	<i>less than .10" per hour</i>
<i>Moderate</i>	<i>.....</i>	<i>.10 to .30 " per hour</i>
<i>Heavy</i>	<i>.....</i>	<i>greater than .30" per hour</i>





# Weather Terminology

## **PRECIPITATION DURATION**

<b>Brief</b>	.....	<b>of short duration</b>
<b>Occasional</b>	.....	<b>irregular intervals</b>
<b>Intermittent</b>	.....	<b>periodic intervals</b>
<b>Frequent</b>	.....	<b>quite often at close intervals</b>

## **CLOUD COVER**

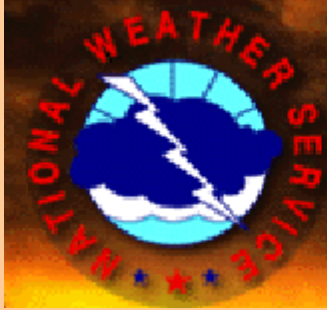
<b>Cloudy</b>	.....	<b>9/10 to 10/10 cover</b>
<b>Mostly cloudy</b>	.....	<b>7/10 to 8/10 cover</b>
<b>Partly cloudy</b>	.....	<b>3/10 to 6/10 cover</b>
<b>Mostly sunny</b>	.....	<b>1/10 to 3/10 cover</b>
<b>Sunny</b>	.....	<b>0/10 to 1/10 cover</b>
<b>Fair</b>	.....	<b>less than 4/10 cover</b>
<b>Variable clouds</b>	.....	<b>Clouds increase and decrease often</b>

## **LIGHTNING ACTIVITY LEVEL**

- LAL 1 - no thunderstorms**
- LAL 2 - isolated thunderstorms, light rain**
- LAL 3 - scattered thunderstorms, light to moderate rain**
- LAL 4 - scattered thunderstorms, moderate rain**
- LAL 5 - numerous thunderstorms, moderate to heavy rain**
- LAL 6 - same as LAL 3 but dry, Red Flag Warning**

[example.htm](#)





# Weather Terminology

## **KBDI – Keetch Byram Drought Index**

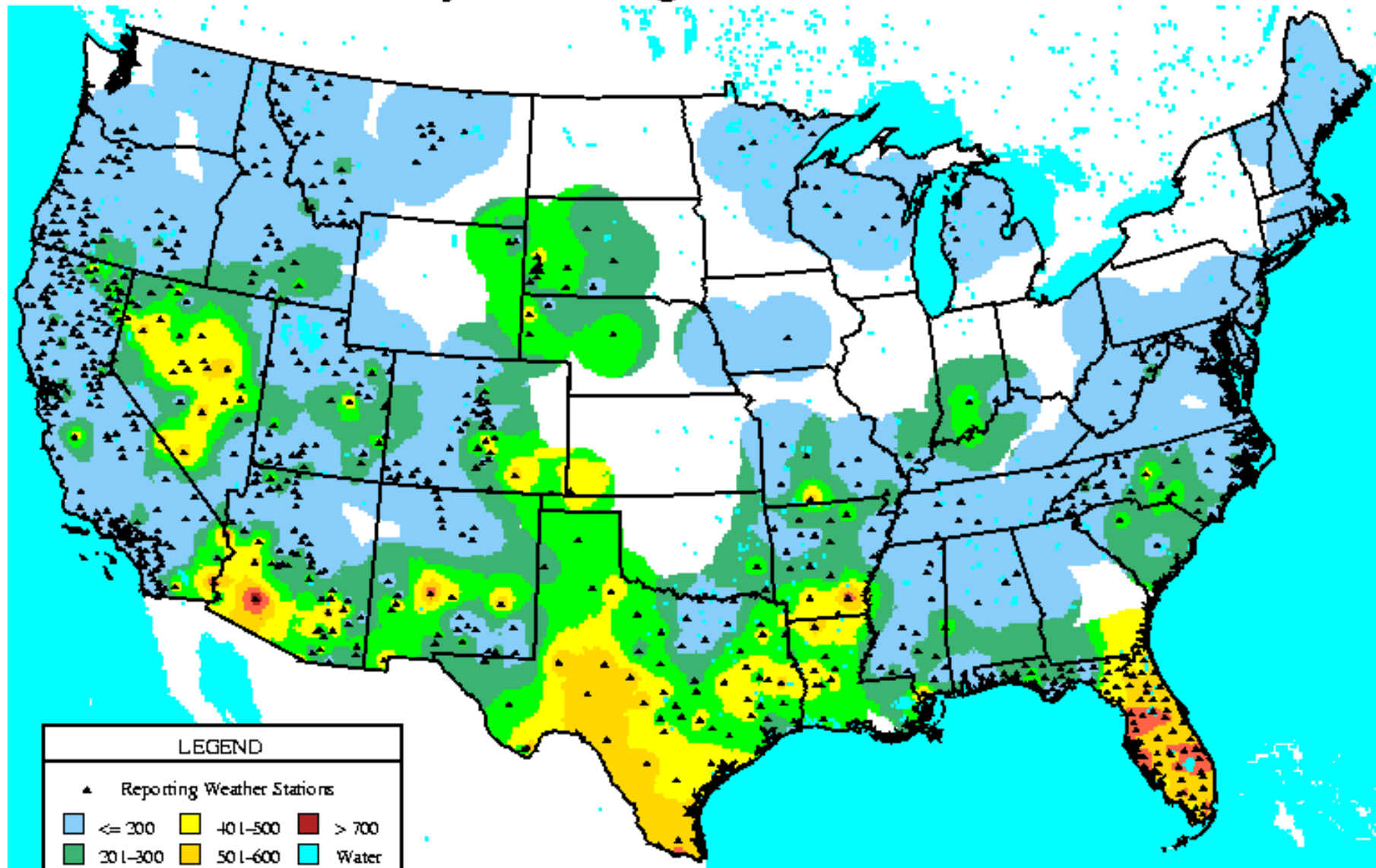
**Measures soil moisture departure, or deficit of water available to the vegetation.**

**Scale 0 to 800 or 0.00 to 8.00 inches of departure**

**Example: KBDI of 520 means there is a deficit of 5.20 inches of ground water.**



# Keetch-Byram Drought Index: 11-JAN-11



## LEGEND

▲ Reporting Weather Stations

≤ 300	401-500	> 700
301-300	501-600	Water
301-400	601-700	

(Inv. Dist.<sup>2</sup> Interp.)

**WFAS-MAPS Graphics FIRE BEHAVIOR RESEARCH MISSOULA, MT**







# Weather Terminology

*Superfog*



# When smoke and fog mix it creates what is known as “superfog”

- Superfog is a combination of fog, smoke and water vapor.
- Fog is merely a cloud whose base rests upon the earth, consisting of a high concentration of water droplets suspended in the air.
- Superfog is fog mixed with smoke, creating an exceptionally dense fog with visibility restricted to less than 10 feet.



# How Superfog Forms

- As smoldering burns downward into increasingly wetter fuels, large amounts of water vapor are boiled off at high temperature.
- Upon reaching the surface, the hot, wet air cools rapidly partly through long wave radiation and partly through mixing with the ambient air –the humidity rapidly goes to 100% -and the moisture flashes into a super dense fog.
- The super dense fog will persist if the surrounding air is already moist

- Gary Achtemeier



# Superfog Looks Like This



Reduces Visibility to 1 to 3 meters



Can be tens of meters deep





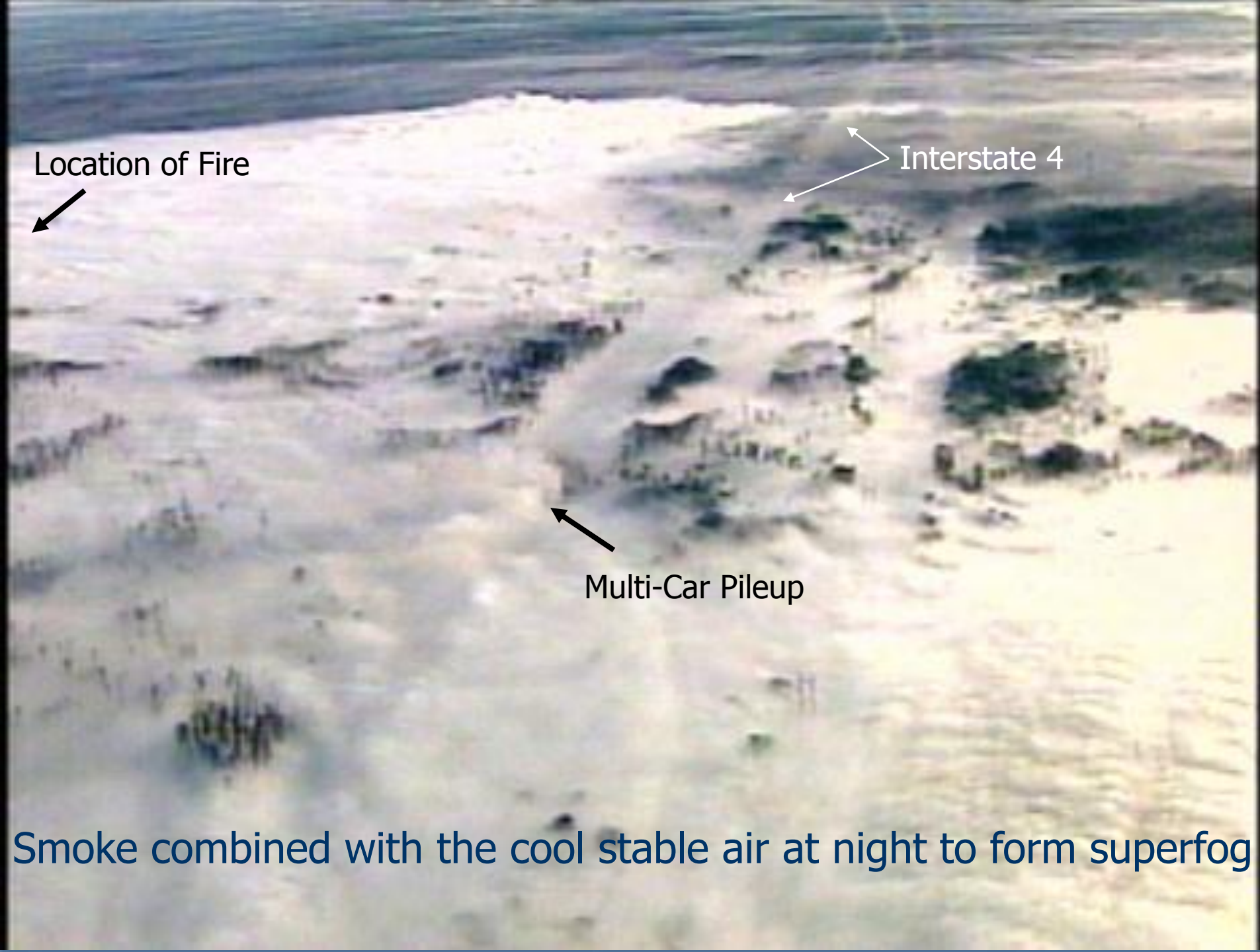
# In the Case of a Florida Fire

"Old Grade Road Fire"



© ERNST PETERS | The Ledger





Location of Fire



Interstate 4



Multi-Car Pileup



Smoke combined with the cool stable air at night to form superfog



# Fog was Exceptionally Dense





Result was Disastrous





# The Morning After The Burn...

January 9, 2008

4 Dead, 38 Injured in Crashes  
Along Foggy, Smokey Highway





# Can It Happen Here?





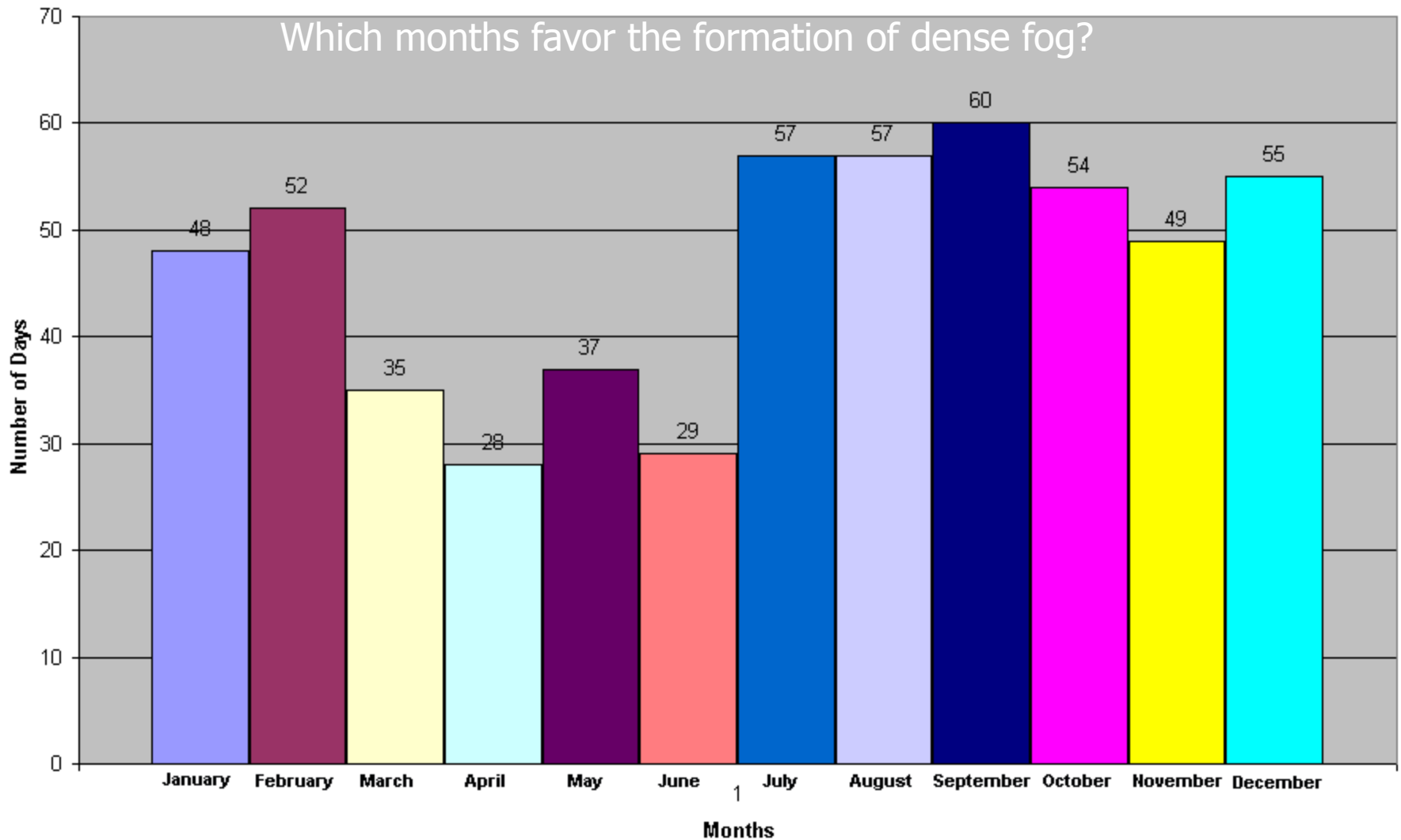
# Keeping This Disastrous Motivation in Mind... How do we mitigate?

- Situational Awareness
- Recognize weather patterns that promote the formation of dense fog
- Staffing
- Increase public awareness
- Warnings when appropriate



# Local Climatology

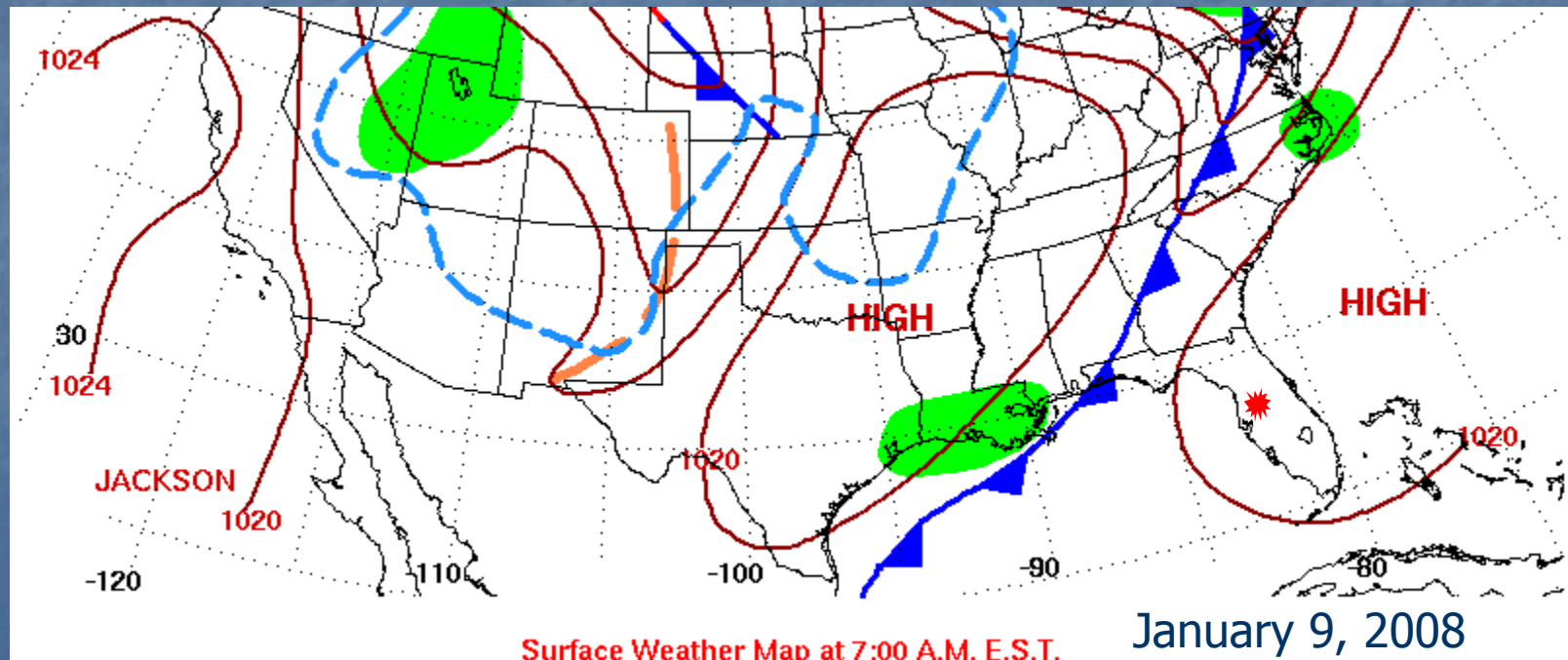
LYH Dense Fog Days 1984 - 2002





# Weather Patterns that favor dense fog formation...

- High pressure centered overhead
- Light or calm winds
- Clear skies





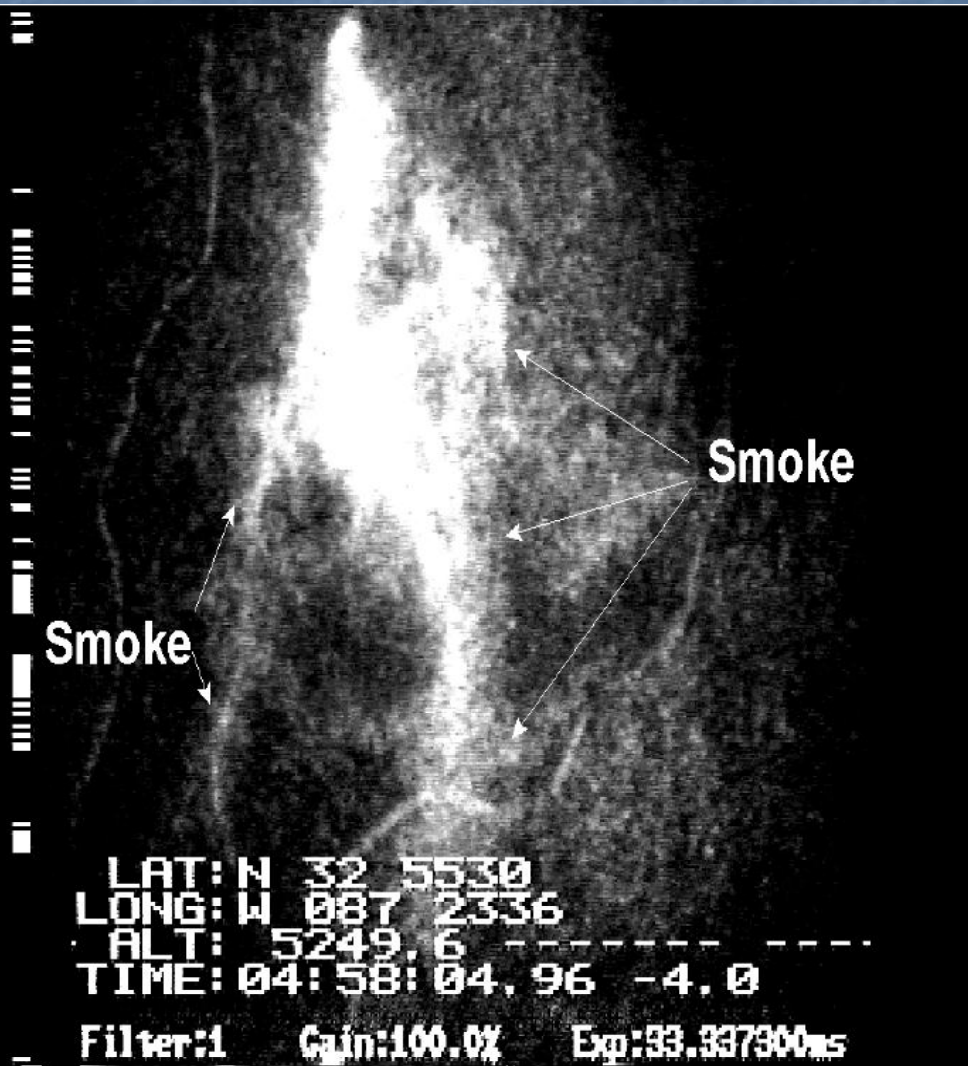
# Monitor the Weather Forecast

- Night-time Dispersion (Very Poor or Poor)
- Humidity Recovery (95-100 percent)
- Wind (Less than 5 mph)
- Fog is being forecast

Note: Smoke at night can cause fog to occur at lower humidities than normal.



# Monitor Drainages and where they Intersect Roads





# Warn For Immanent Danger

Plan Ahead!





Superfog

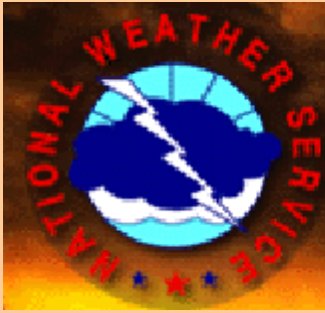




Is Real!



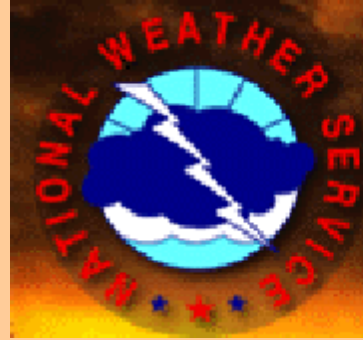




# Review

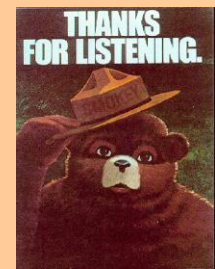
- Identify best source of fire weather information.
- List Types of forecasts available.
- Describe common terms used in weather forecasting.
- Define Red Flag Warning.
- Define Superfog



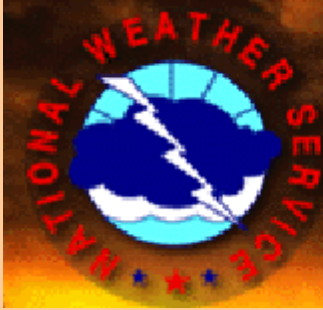


# S-290 Intermediate Wildland Fire Behavior

Learn more about  
Fire Weather Intelligence!







Blacksburg, VA

Phillip Manuel (Fire Weather Program Leader)

NWS – Corporate Research Center

1750 Forecast Drive

Blacksburg, VA 24060

Email: [phillip.manuel@noaa.gov](mailto:phillip.manuel@noaa.gov)

Phone: 540-552-0084

Fax : 540-552-1650